Appendix E

ARMY AVIATION

CONTENTS

SECTION I. COMBAT AVIATION BRIGADE

Organization

CABs are assigned from echelons above corps through division level. Although their missions are basically the same, their organizations differ based on their higher headquarters, locations, and specific missions. In the heavy division, the CAB consists of one HHC, one cavalry squadron, two attack helicopter battalions, one assault helicopter company, and one command aviation company. Forward deployed heavy divisions are assigned two attack helicopter battalions, while CONUS-based units are assigned one. Figure E-1 depicts the organization of the aviation brigade for the heavy division.

Aircraft Requirements

The aircraft requirements of the heavy division CAB are 36 AH-64s, 8 AH-1Ss, 44 OH-58 A/Cs, 6 OH-58D "armed" helicopters, 24 UH-60s, 6 UH-1s, and 3 EH-60s. The distribution of these helicopters within the brigade is depicted in Figure E-1.

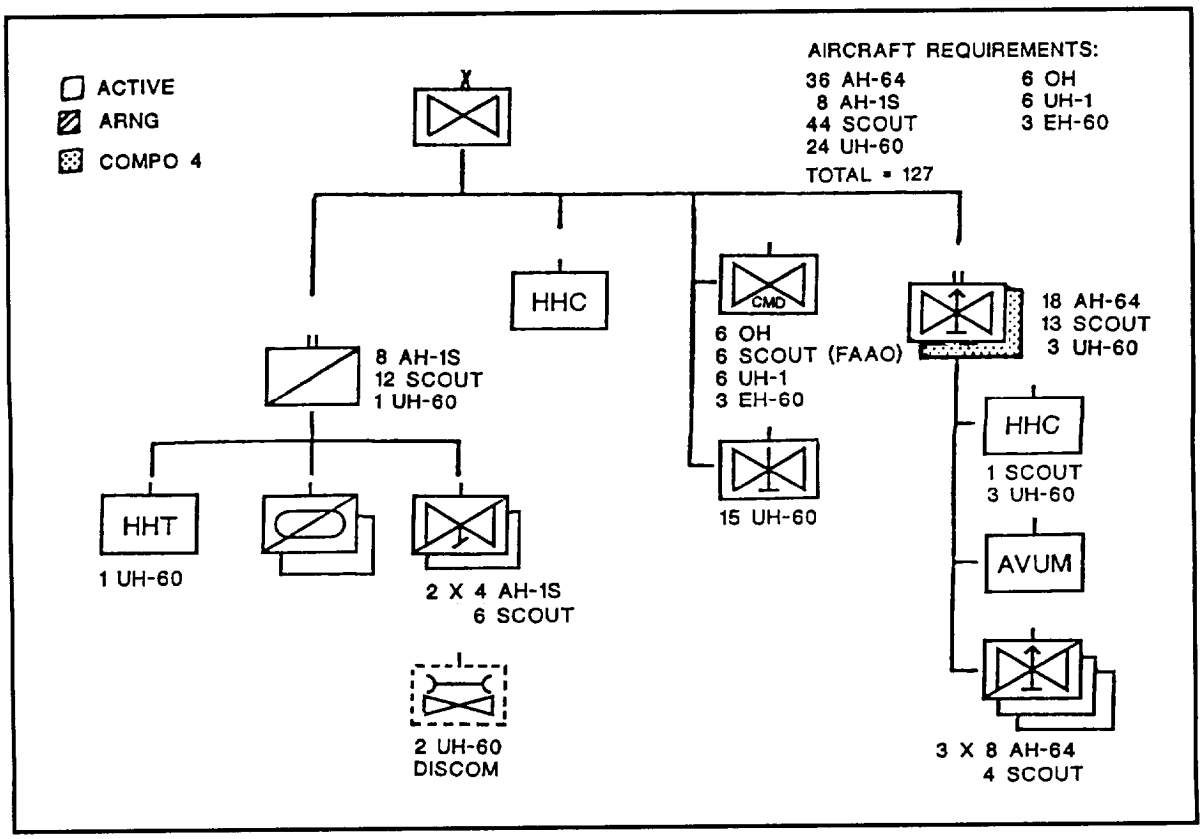

Figure E-1. Combat aviation brigade organization (heavy division).

Weapon Systems

The capabilities of the various weapon systems carried by the aircraft within the CAB give the brigade a high degree of flexibility and firepower. The aircraft carry the following specific weapon systems.

AH-84 (Attack)

One turret-mounted 30mm chain gun with a 1,200-round capacity and a maximum effective range of 3,000 meters.

Sixteen Hellfire antitank missiles with a maximum effective range of 6,000 meters and up, or 76 2.75-inch rockets (freed from four 19-round pods) with a maximum effective range of 5,500 meters, or a mixture of the two weapons.

AH-1S (Attack)

One turret-mounted, three-barreled 20mm gun with a 750-round capacity and a maximum effective range of 1,500 meters.

Eight TOW antitank missiles with a maximum effective range of 3,750 meters,

Thirty-eight 2.75-inch rockets (fired from two 19-round pods) with a maximum effective range of 5,500 meters. Thirty-eight additional 2.75 inch rockets can be installed if the TOW antitank missiles mounted on the outboard weapon mounts are not used.

OH-58 A/C (Scout)

Unarmed.

OH-58D "Armed" (Scout)

Two air-to-air Stinger missiles on each side of the fuselage, or two Hellfire missiles on each side of the fuselage, or one caliber .50 machine gun, or a rocket pod of seven 2.75-inch rockets on each side of the fuselage, or a combination of each.

UH-60 (Assault/MEDEVAC)

Two pintle-mounted 7.62-mm machine guns (one on each side of the aircraft).

UH-1 (Utility)

Two pintle-mounted 7.62-mm machine guns (one on each side of the aircraft).

EH-60 (Electronic Countermeasure)

Unarmed.

Mission

The heavy division CAB has the mission to find, fix, and destroy enemy forces using fire and maneuver to concentrate and sustain combat power at the critical time and place. The brigade can also provide timely reconnaissance and intelligence throughout the division area and can conduct air assault and air movement operations. With all of these capabilities, the CAB provides the division commander with a fourth maneuver brigade which is capable of planning and conducting maneuver operations. Finally, the brigade can conduct missions either as an aviation-pure force or as a task-organized force.

SECTION II. LOWER ECHELON HELICOPTER UNITS

Attack Helicopter Battalion

AHBs are assigned to divisional aviation brigades, corps attack helicopter regiments, and divisional aviation brigades. They give the commander a highly mobile, 24-hour-a-day antiarmor capability. It is important to remember that AHBs are maneuver units and not CAS or FS units. Therefore, they must be integrated into the commander's tactical plan along with his other maneuver units.

The heavy division AHB consists of an HSC and three AHCs. The organization of the heavy division AHB is depicted in Figure E-2. The AHCs provide the AHB commander with antiarmor capability. Each AHC consists of an aeroscout platoon with four scout helicopters (OH-58s or OH-58Ds "armed") and an attack platoon with seven attack helicopters (AH- 1Ss). An AH-64-equipped AHC has six AH-64s per attack platoon.

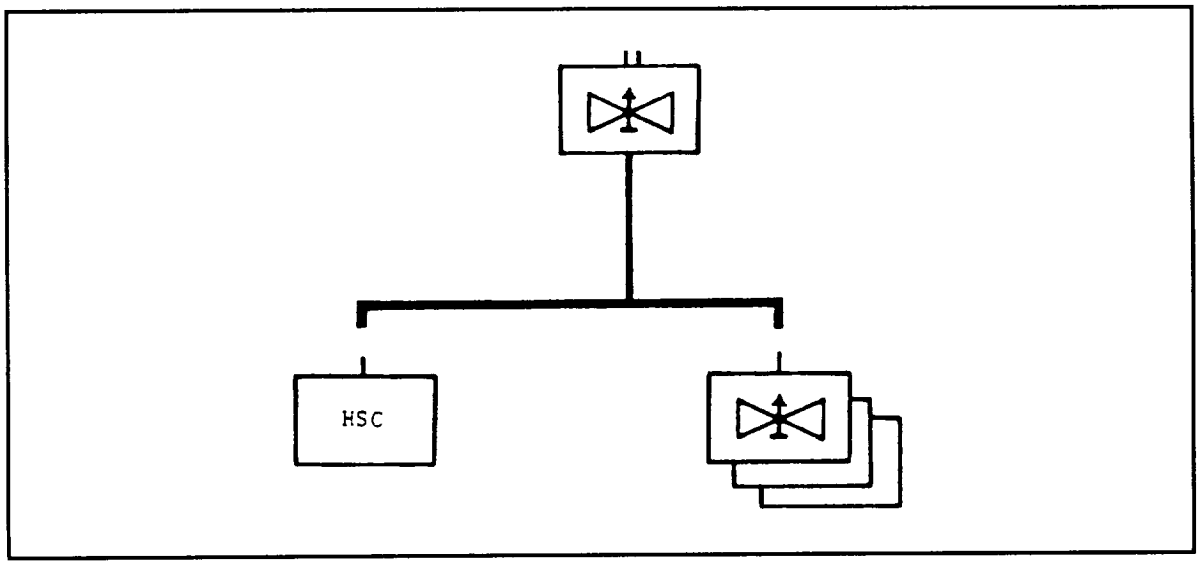

Figure E-2. Attack helicopter battalion organization.

The AHB has the mission to destroy or disrupt massed enemy armor and mechanized forces using aerial firepower, mobility, and shock. It can also destroy enemy helicopters that pose an immediate threat and conduct JAAT operations with CAS and FA assets. It is important to remember that the AHB cannot conduct missions that require the occupation of terrain. It can, however, deny the enemy use of that same terrain for a limited time by employing organic and supporting fire.

Divisional Cavalry Squadron Air Cavalry Troop

Divisional cavalry squadron ACTs are assigned to the heavy division's cavalry squadron. The squadron consists of an HHT, two ground cavalry troops, and two ACTs. Each ACT consists of an aeroscout platoon with six scout helicopters (OH-58 A/Cs) and an attack helicopter platoon with four attack helicopters (AH-64s or AH-1Ss).

The two ACTS, deployed with the ground troops, act as "eyes and ears" for the division commander. They have the capability to cover wide frontages and add depth to the battle area. Attack helicopters in the troop primarily provide suppressive and protective fires for the aeroscouts. As the situation develops, however, the ACT's attack helicopters can be used in an antiarmor role. The ACT is flexible; it can be task organized with other aviation assets to conduct various missions.

SECTION III. PLANNING OPERATIONS WITH ARMY AVIATION ASSETS

Planning Considerations

Planning considerations for operations that include aviation assets are similar to those of any tactical operation. The two primary factors are the higher commander's intent and the factors of METT-T, but others, such as CSS and risk analysis, must be integrated from the start. Three specific areas in

the planning process are of critical importance to aviation units: task organization, the integration of aviation and ground forces, and command and support relationships.

The appropriate task organization is essential to establish effective combined arms teams. Often the CAB will have some of its organic elements task organized with other maneuver brigades or will be provided additional ground forces and CS elements to accomplish a given mission. The ability of aviation units to task-organize with other maneuver elements gives aviation the combat staying power necessary for combined arms operations. It is important to remember, however, that the use of aviation-pure forces can give the higher commander the agility and flexibility to make a decisive strike at the enemy.

Integration of the combat power of aviation and ground maneuver forces is extremely important because air and ground forces do not always attack along the same axis or have identical objectives. The planning for such operations must capitalize on the strengths of each combat system. In whichever role the aviation assets are used, the plan must be all-encompassing and ensure a coordination of effort.

CABS and subordinate units may operate with other maneuver, CS, or CSS elements during an operation. These assets may be employed in either a command or support relationship. Command relationships include assigned attached, and operational control. The only support relationships that apply to aviation CS and CSS operations are DS and GS. This may include assault helicopter and medium helicopter units performing air movement operations when tasked.

Principles of Aviation Employment

The principles and guidelines for employment of aviation assets differ from those for typical ground maneuver forces. In general, aviation forces—

- Fight as an integral part of the combined arms team.
- Exploit the capabilities of other branches and services.
- Capitalize on intelligence-gathering capabilities.
- Suppress enemy weapons and acquisition means.
- Exploit firepower.
- Exploit mobility.
- Exploit surprise.
- Mass forces.
- Use terrain for survivability.
- Displace forward elements frequently.
- Maintain flexibility.
- Exercise staying power.

SECTION IV. COMMUNICATIONS

Successful employment of aviation assets is possible only if they are able to communicate with the other members of the combined arms team. The primary means of communications with helicopters is FM secure. To help reduce the load on the FM radios, all helicopters have UHF and VHF radios, and scout (OH-58D or OH 58D “armed”) and C2 aircraft have HF radios. Other available communications means include wire, messenger, multichannel, and RATT, Figure E-3 depicts an example of an AHB’s external communications net.

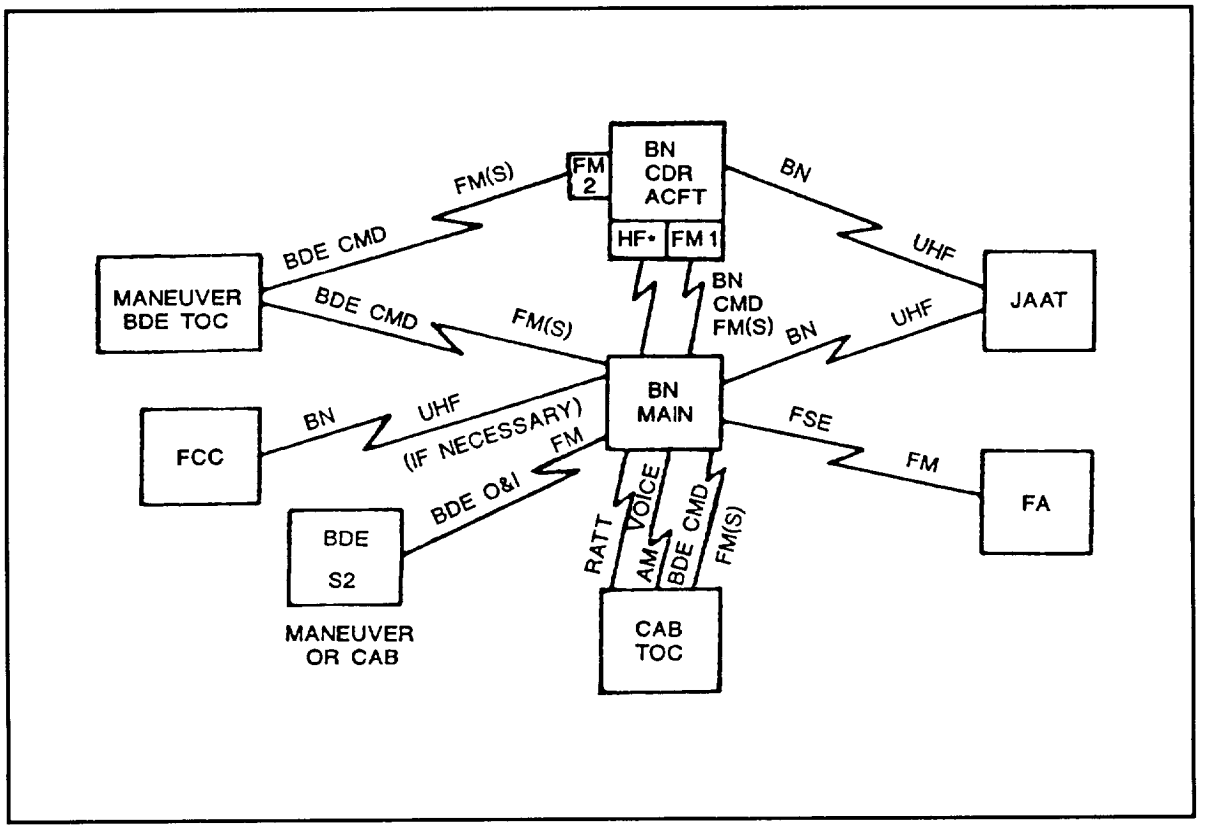

Figure E-3. Attack helicopter battalion communications net.

SECTION V. OFFENSIVE OPERATIONS

Tactical Positions

To organize and control the movement of aviation assets, the commander establishes a series of tactical positions and routes. The control measures that follow allow the commander to control the battle and fight his units with minimum voice communication.

Assembly Areas

AAs for aviation units are normally located in the corps, division, or brigade support area. They must have ingress and egress routes that offer cover and concealment for the aircraft.

Brigade Rear Area

These are used by attack helicopters to shut down for extended periods while awaiting orders for battle. They should be located at or near the ground maneuver unit's TOC.

Holding Areas

These should be located between the forward AA and the battle positions. Attack helicopters may occupy these positions for a short time and may hover or land, but they will not shut down. Holding areas should be terrain-masked and free of rotorwash signature sources.

Attack Routes

Attack helicopters move from holding areas to BPs over designated attack routes. Aeroscouts select the attack routes that take advantage of cover and concealment and have prominent terrain features to aid in navigation.

Battle Positions

Attack helicopters engage targets from conceded BPs designated by the commander. The ABC designates section BPs and sectors of fire. Aeroscouts maintain contact with the targets and call up the attack helicopters as enemy forces come into range.

Firing Positions

These should provide maximum standoff ranges with good fields of fire and should provide terrain clearance to allow firing of antitank missiles. Firing positions must also allow freedom of movement for the attack helicopter.

Movement To Contact

During a movement to contact, attack helicopters from the AHB will be critical to the success of the advance forces and the main body of the ground maneuver unit. As part of the advance guard, the AHB can destroy forward enemy elements and contain bypassed enemy units. Its mobility and firepower will permit the maneuver commander to overwhelm the enemy and maintain the initiative.

Hasty Attack

During a hasty attack, attack helicopters have the speed and firepower necessary to shock and overwhelm the enemy and seize the initiative. Employed independently, the AHB is least effective when attacking strongly held, fortified defensive positions because of its lack of staying power and inability to hold terrain. It can, however, provide heavy and effective suppressive fires when attacking with ground maneuver forces.

Section VI. DEFENSIVE OPERATIONS

Deep Battle Area

AHBs are ideally suited for deep battle operations because of their speed, mobility, flexibility, and firepower. At division level, they may be the commander's only means of influencing the deep battle. The AHB can participate in several different deep attack missions. The most common are an operation of limited duration, an operation to secure a deep objective, and an operation to continue the attack.

An operation of limited duration resembles a mid. The AHB penetrates enemy territory to delay, disrupt or destroy a known target. Once the mission is finished, the attack force withdraws. An operation to secure a deep objective is a deliberate attack with the goal of occupying specific area in enemy territory. This is a combined arms mission, with the AHB part of the force. An operation to continue the attack is similar to exploitation. The AHB operates as part of a larger force and attacks withdrawing or counterattacking enemy forces before their arrival in the objective area. Despite the defensive nature of the higher headquarters mission, the AHB's missions are offensive in nature.

Covering Force Area

The AHB is the primary force that allows the covering force commander to tight his battle aggressively and maintain the offensive spirit. Due to its speed and agility, the AHB can rapidly respond and concentrate its firepower throughout the covering force area. The AHB is normally employed in hasty attacks from

forward AAs on targets that are well forward in the covering force area. In the division area, the AHB is the primary long-range killer in the aviation brigade. Missions normally assigned to the AHB include attacking follow-on forces, overmatching the movement of ground forces, and acting as a blocking force.

The reason to attack follow-on forces is self-explanatory; the commander decides that he must destroy or disrupt an enemy follow-on force to ensure the success of his own operation. Overwatching the movement of ground forces can involve a variety of different missions. An example is relieving a battalion task force to allow it to maneuver to a subsequent BP by denying the enemy the ability to maneuver over certain terrain. The AHB can also overwatch battle handover from the covering force to the MBA forces. The AHB can also act as a blocking force. This allows the covering force commander to protect an enemy penetration point while he maneuvers his ground units to blunt the penetration.

Main Battle Area

In the MBA, the AHB can be used to destroy enemy lead elements entering the main AO. It can also attack and destroy follow-on forces that are capable of influencing the enemy's main effort. The AHB should be employed as soon as this main effort has been identified. The AHB also can be held in reserve by the division or committed as an independent force against enemy forces that have bypassed or penetrated MBA forces. Another option is to assign the AHB OPCON to a ground maneuver brigade to give it additional combat power. Employment techniques are the same as those used in the covering force area.

Rear Battle Area

When used in the rear battle area, the AHB is best employed as a rapid reaction force. With its mobility and short reaction time, it should be assigned on-order missions to support the rear area. It can react rapidly to an enemy air assault in the corps or division rear area and contain or destroy enemy forces once they are in the rear area. It is important to remember that rear area operations require close coordination between artillery, CAS, and attack helicopter units to ensure success.

SECTION VII. OTHER TACTICAL OPERATIONS FOR AVIATION

Raid

The AHB is the ideal unit for conducting a mid. The mission is short in duration and requires speed, flexibility, and audacity. The following are considerations related to planning and conducting a raid with attack helicopters.

- A well-defined objective is required.
- The mission must be of short enough duration to be accomplished on one fuel load.
- Multiple routes must be available for aircraft.
- Air-to-air security must be emphasized.
- Actions at the objective should be fast-paced and provide for massed fires.
- Attack helicopters are best suited for raids against moving targets.

Exploitation

In the exploitation, the AHB is employed as part of a larger force. It allows the exploiting force to strike the enemy's flanks and rear area to disrupt his withdrawal and reorganization. The AHB operates as in a movement to contact moving behind the ground force, ready to strike early in the fight. In addition, the attack helicopters can effectively interdict and harass retreating enemy armored forces.

Pursuit

The AHB's speed mobility, and firepower make it an ideal force for a pursuit. It can maneuver deep to outflank and contain retreating forces and quicken the disintegration of the enemy's will to fight. By "phasing" its three attack helicopter companies (one company in battle, one company en route to battle area, and one company en route to or at the FARP), the AHB can place continuous pressure on the withdrawing enemy force.

SECTION VIII. JOINT AIR ATTACK TEAM OPERATIONS

JAAT Composition

A JAAT is a combination of US Army attack and aeroscout helicopters and FA and US Air Force CAS Aircraft. These elements operate together to attack lucrative, high-priority targets. By employing helicopters and CAS aircraft simultaneously against the enemy, the ground commander can increase the lethality and survivability of both systems. Although the JAAT can operate with both brigade- and battalion-size units, brigade should be the lowest level at which a JAAT is planned. The JAAT is best employed against moving formations since these targets are the easiest to acquire. It is least effective when attacking camouflaged, dug-in targets.

Several key personnel are involved in planning and conducting a JAAT operation. This group includes the ground maneuver commander, the AHB or AHC commander, the TACP/ALO, the CAS aircraft flight leader, the FSCOORD, and the ADA officer.

The ground maneuver commander is responsible for the planning, coordination, and employment of the JAAT. He is also responsible for the ground and airspace where the JAAT will take place. The ALO coordinates with the ground maneuver commander, S3, and FSCOORD to determine the type of target and the location of friendly forces in the target area

The AHB or AHC commander directs his element's participation in the JAAT. He must know the ground and air tactical plans and maintain constant contact with the other participants. He also coordinates the air attack with the ground maneuver commander and resolves any air corridor problems with the FSCOORD and the ADA officer.

The TACP/ALO is responsible for control of the CAS aircraft in the JAAT. The CAS aircraft flight leader directs the attack for his aircraft, CAS flights will normally consist of two or four A-10s, but could involve the same number of A-7s or some other type of CAS aircraft.

The FSCOORD determines the need for, availability of, and positioning of the artillery assets to support the JAAT. He coordinates with the TACP/ALO to reconcile the CAS IP with the artillery plan and develops ACAs to support the operation. He also determines the need for SEAD and recommends FS to enhance the success of the mission.

The ADA officer is responsible for planning the critical air defense umbrella to protect the JAAT. He coordinates with all participants to ensure he knows the location of any air corridors, attack helicopter BPs, CAS IPs, and ACAs. ADA assets must be fully incorporated into the JAAT plan and be very familiar with friendly air operations.

Forming a JAAT

The actual composition of a JAAT will vary slightly, depending on the mission and the major command that forms it. During the course of a battle, the maneuver forces may need increased firepower against a given target array. When attack helicopters are already OPCON to the brigade, a request is made through either preplanned or immediate channels for CAS aircraft. The request will specifically refer to a "JAAT mission," This will alert the ASOC that the ground maneuver commander prefers A- 10 aircraft.

When attack helicopters are not OPCON to the brigade, the commander forwards a request to division. The brigade S3, S3-Air, or ALO should request CAS through regular channels, again questing a "JAAT mission." The CAS request should state that attack helicopters have also been requested. If both CAS aircraft and attack helicopters are available, the aircraft will be committed by the G3.

Once approval for the JAAT has been received, planning by the brigade is initiated. If the JAAT is to be employed in a task force sector, the task force commander will be informed of the plan that may include the execution of the JAAT by his task force. The JAAT plan should allow for multidirectional attack to deny the enemy's ADA assets and ground forces the ability to focus in one direction. Although the JAAT assets may be requested and planned for, the brigade commander must be prepared to execute his plan without all of the assets requested.

The ground maneuver commander is responsible for conducting the baffle in his operational area. His primary means of communicating with the JAAT is by FM radio through the AHB or AHC commander. The AHB or AHC commander has communications through the ground-air net (FMl) and the JAAT air-to-air net (FM2). FMl stations include the ground maneuver commander, major subordinate maneuver units, the AHB or AHC commander, the TACP/ALO, and the FSCOORD. The AHB or AHC commander uses this net to coordinate the scheme of maneuver and to keep the ground commander informed of the situation at the battle area. FMl operates in the secure mode. The ground unit commander has the option of conducting the JAAT through the AHB or AHC commander over his own command net or through the AHB or AHC command net. FM2 is the primary means the AHB or AHC commander has to coordinate the assets of the JAAT operation. The primary elements on this net will be the attack helicopter platoons, the TACP/ALO (shown as an airborne FAC in Figure E-4), and the CAS aircraft (A- 10s) flight leaders. UHF is used primarily for communications within attack helicopter sections. UHF/VHF will normally be used for CAS flight internal communications and may be used as an alternate JAAT air-to-air net. Figure E-4 depicts a typical communications net for a JAAT mission.

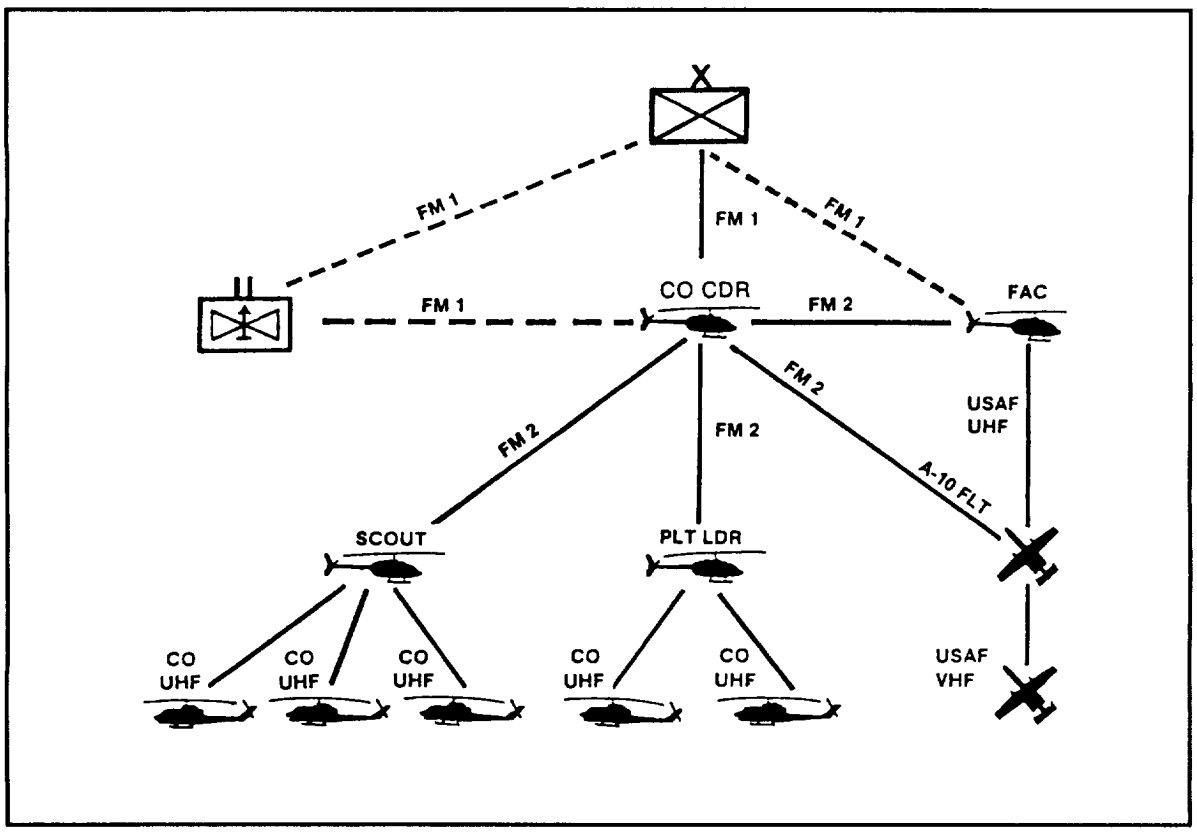

Figure E-4. JAAT communications net.

JAAT Employment Techniques

There are two basic JAAT employment options the sector attack and the combined attack. These options may be modified to meet the situation.

Sector Attack

The term sector refers to use of separate avenues of approach to the target area. In sector attack each element of the JAAT operates in its assigned sector. The sector boundary should be well defined to ease recongnition and eliminate airspace conflicts. Attack timing may be simultaneous, sequential, or random. It may be executed by a time hack or by visual sighting. During sector-simultaneous attacks, each element maneuvers within its sector to attack simultaneously with other JAAT elements. During sector-sequential attacks, each element maneuvers within its sector to attack in a predetermined sequence. Attack intervals in this sequence may range from several seconds to several minutes. During sector-random attack, each element maneuvers within its sector and attacks at will. Sector-sequential attack minimizes airspace control problems and allows synchronized attack by both air- and surface-delivered fires. Sector-random attack precludes precision synchronization of surface frees and increases the likelihood of fratricide.

Combined Attack

The combined attack allows for heavy firepower to be brought onto a single point in a short space of time. The method works well for the destruction of multiple targets in a small EA. The primary disadvantages of this option are airspace constraints and target overkill. Again, attack timing can be simultaneous, sequential, or random and may be arranged by time hack. Timing, range fan, and fragmentation precautions apply in the same manner as in sector attack. Additionally, great care must be taken in the random attack, especially within a narrow avenue. If the aviation commander selects a combined attack, but wishes to sector the specific target area, he can do so by directing elements to a cardinal direction of the designated target area. This allows for a combined attack while enhancing firepower distribution.

If the situation permits, reattacks should be used to keep continuous pressure on the target. Once cleared into the area by the TACP/ALO or the AHB or AHC commander, units usually will not require clearance for individual attacks within the sector. The TACP/ALO or the AHB or AHC commander can terminate the attack by using prebriefed code words or by direct order. Sustained combat requires continuous pressure on the target area CAS aircraft departing the area update inbound flights with the most current information. When possible, the ATB or AHC commander or his aeroscouts remain in the target area to effect battle handover of inbound flights and attack helicopter teams. The JAAT operation is then repeated as long as assets are available or until the mission is accomplished.

Execution

Upon arrival in the battle area, CAS aircraft contact the TAPC/ALO for attack information. The battlefield environment may permit the TAPC/ALO to directly control the CAS aircraft. In the absence of the TAPC/ALO, the AHB or AHC commander must be prepared to brief the CAS flight leader. As a minimum, the CAS flight leader will provide the call sign, mission number, ordnance carried, and flight station time. The TAPC/ALO will provide the flight leader with an attack briefing. In a high-intensity. high-threat environment, a full attack briefing may not be possible. As a minimum, the CAS flight leader will need a target and a target description. A- 10s usually enter the target area in a two-ship flight. Terrain and weather will affect the number of flights that can operate in an area at one time. Attack helicopter fires should be keyed to the “inbound call” from the A- 10s after they are cleared for the attack. Enemy antiaircraft fire will intensify when the A- 10s come on station, thus allowing the attack helicopters to identify and destroy those systems.

Indirect fires are critical and must be incorporated into JAAT planning. Artillery fires should be used to slow the enemy, suppress his ADA assets, and canalize his armored and mechanized forces. Once the operation is under way, the AHB or AHC commander and/or the aeroscouts work directly with the FSCOORD to coordinate the indirect FS.

Another important aspect of JAAT operations is A2C2. The primary objective of A2C2 is to provide the safe, orderly, and expeditious use of airspace in the combat zone while contributing to maximum combat effectiveness and survivability. This mission is performed informally by members of the brigade staff by extracting and disseminating critical information from various sources. The key A2C2 players at the brigade are the FSCOORD, ALO, and AHB or AHC commander, functioning under the staff supervision of the S3. Normally, the S3-Air serves as the management focal point for A2C2. Airspace and fire control functions are closely interwoven and involve the detailed coordination and integration of CAS, indirect artillery fire, organic and supporting air defense tire, and the tactical fire and maneuver of the ground units. Normal operational planning and execution and adherence to unit TSOPs should prevent most conflicts between airspace users. The ground maneuver commander must establish priorities for use of airspace. These serve as guidelines to resoIve conflicts among airspace coordinators and users.

A correctly planned and executed JAAT mission, with the team employed with the ground maneuver commander's organic units or employed as an independent force, can be decisive. Figure E5 depicts the employment of a JAAT in a task force sector, with its firepower combined with the organic fires provided by the ground unit.

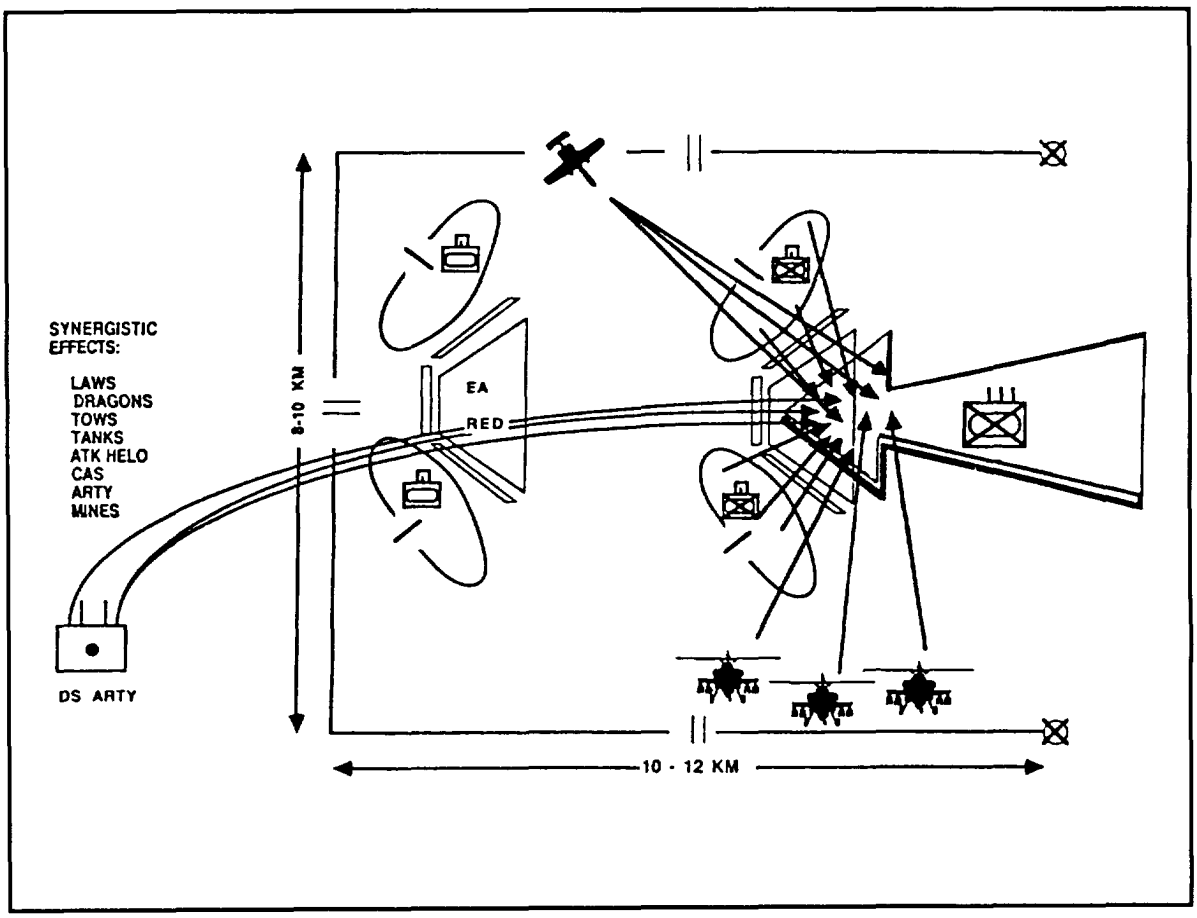

Figure E-5. JAAT employed in task force sector.